St. Louis 8-Hour Ozone Nonattainment Area Reasonably Available Control Technology (RACT) Demonstration

Public Hearing
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Missouri Department of Natural Resources

Missouri Department of Natural Resources
Division of Environmental Quality
Air Pollution Control Program

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I. PURPOSE

The purpose of this submittal is to document that the Missouri Department of Natural Resources has reviewed Missouri's obligation to implement Reasonably Available Control Technologies (RACT) on major air pollution sources in the Missouri portion of the St. Louis ozone nonattainment area and to certify that RACT controls previously instituted under the old 1-hour ozone standard represent RACT for the 8-hour ozone standard. According to the EPA's final rule to implement the 8-Hour Ozone National Ambient Air Quality Standards (NAAQS) (70 FR 71612, November 29, 2005), areas such as St. Louis which are classified as moderate ozone nonattainment areas must submit a demonstration that their current rules fulfill 8-hour ozone RACT for all Control Techniques Guidelines (CTG) categories and all major, non-CTG sources as a revision to their State Implementation Plans (SIPs). This document is intended to serve as the necessary SIP revision.

II. RACT HISTORY / BACKGROUND

The federal Clean Air Act Amendments (CAAA) of 1990 give the states primary responsibility for achieving the NAAQS. The NAAQS are set by the U.S. Environmental Protection Agency (EPA) as the maximum concentrations in the atmosphere for specific air contaminants to protect public health and welfare. The principal mechanism at the state level for complying with the CAAA is the SIP. A SIP outlines the programs, actions, and commitments a state will carry out to implement its responsibilities under the CAAA. SIPs are submitted to EPA for approval, and upon approval they become legally binding documents under both state and federal law. Both the state and the federal government can then enforce the SIP.

The department has prepared numerous air quality planning documents to meet state and federal clean air mandates to address ozone pollution in the St. Louis area. In 1997 the ozone NAAQS was reviewed, and EPA recommended that the ozone standard be changed from 0.12 parts per million of ozone measured over one hour to a standard of 0.08 parts per million measured over eight hours, with the average fourth highest concentration over a three-year period determining whether an area is in compliance.

The St. Louis area is currently designated as a moderate 8-hour ozone nonattainment area. The nonattainment area is located on both sides of the Mississippi River, the dividing line between Missouri and Illinois. The Illinois portion consists of Madison, Monroe, St. Clair and Jersey Counties. The Missouri portion of the nonattainment area consists of Franklin, Jefferson, St. Charles and St. Louis Counties and St. Louis City.

One of the central elements of a SIP is the air pollution emission control measures, including controls on both stationary sources and mobile sources. Control measures for ozone are techniques, practices, and equipment for reducing emissions of ozone precursors, Volatile Organic Compounds (VOCs), and Nitrogen Oxides (NOx). The three primary categories of ozone precursor emissions that can be controlled are stationary, area, and mobile sources. Stationary sources are larger industry sources. Examples of stationary source control measures include industrial surface coating

regulations, printing regulations, regulations on the manufacture of paints, and emission limitations at electric utilities. Area sources are defined as sources that are individually small, but have significant emissions as a group because of a large number of sources. Examples of area source controls include gasoline station vapor recovery systems, regulations on solvent metal cleaning, and asphalt paving restrictions. Mobile sources include on road vehicles, and off-road vehicles and equipment. The St. Louis SIP also includes mobile source controls such as reformulated gasoline, and the inspection and maintenance program for automobiles. There are many other regulations that are currently in place for the control of ozone that apply to many activities in St. Louis including open burning, incineration, gasoline storage, dry cleaning, screen printing, asphalt paving, and chrome plating, and fuel burning.

SIPs are not one-time documents, but are periodically updated and revised. Moreover, each successive SIP builds on its predecessor. Section 182(b)(1)(A) of the CAAA required that each state in which all or part of a moderate ozone nonattainment area was located submit a SIP revision providing for a 15 percent (net of growth) reduction in emissions of VOCs by November 15, 1996. The 15 percent reduction was measured from calendar year 1990 baseline emissions and be "net" of any growth that occurred in the nonattainment area after November 15, 1990.

For St. Louis, SIP controls were implemented to meet the 15 percent reduction requirement. Certain controls were also implemented in St. Louis that were not creditable toward the 15 percent requirement. These included reductions achieved by the Federal Motor Vehicle Control Program promulgated prior to 1990; reductions from requirements to lower the Reid Vapor Pressure (RVP) of gasoline promulgated prior to 1990 or required under section 211(h) of the Act which restricts gasoline RVP; reductions from corrections to an existing Vehicle Inspection and Maintenance Program; and reductions from corrections to certain RACT rules.

This 15 percent demonstration is commonly known as the Rate-Of-Progress Plan (ROPP). On March 18, 1996, EPA proposed a limited approval and limited disapproval of Missouri's January 13 and July 11, 1995, ROPP submittals (61 FR 10968). In the same notice, EPA also proposed to conditionally approve the state's municipal solid waste landfill and clean-up solvent rules, two components of the ROPP. On July 2, 1997, EPA issued a subsequent proposal to approve Missouri's landfill and gasoline RVP rules. On November 12, 1999, EPA received a revised ROPP and a request to amend the Missouri SIP. The revised plan was significantly different from the previous version. EPA proposed approval of the revised ROPP on February 17, 2000 (65 FR 8083) and approved it on May 18, 2000 (65 FR 31485).

The ROPP addressed Missouri’s obligation to document that RACT controls were implemented for all major VOC sources in the St. Louis ozone nonattainment area. As part of this review, the department corrected several RACT deficiencies. On October 28, 1999 the Missouri Air Conservation Commission adopted several VOC RACT rules to address these deficiencies. The list of rules adopted includes:

- 10 CSR 10-5.295 Control of Emissions From Aerospace Manufacture and Rework Facilities
- 10 CSR 10-5.500 Control of Emissions From Volatile Organic Liquid Storage
- 10 CSR 10-5.530 Control of Volatile Organic Compound Emissions From Wood Furniture Manufacturing Operations
- 10 CSR 10-5.540 Control of Emissions From Batch Process Operations
- 10 CSR 10-5.550 Control of Volatile Organic Compound Emissions From Reactor Processes and Distillation Operations Processes in the Synthetic Organic Chemical Manufacturing Industry.

III. 8-HOUR OZONE RACT

As a moderate ozone nonattainment area, St. Louis is required by federal regulations promulgated under the CAAA to attain the 8-hour ozone standard by June 15, 2010. A 2007 St. Louis Attainment Demonstration SIP is being developed to meet this new federal clean air mandate. Sections 182(b)(2) and 182(f) of the federal Clean Air Act require ozone nonattainment areas to implement RACT for sources that are subject to CTGs issued by EPA and for "major sources" of VOC and NOx, which are ozone precursors. RACT is defined as the lowest emissions limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility (44 FR 53762; September 17, 1979). RACT requirements were included in the Clean Air Act to assure that significant source categories at major sources of ozone precursor emissions are controlled to a "reasonable" extent, but not necessarily to Lowest Achievable Emission Rate (LAER) expected of new sources or Maximum Achievable Control Technology (MACT) levels.

Under phase II of the 8-hour ozone implementation rule areas may rely on previous analyses prepared for the one-hour ozone plans and EPA guidance documents when considering RACT requirements for ozone nonattainment areas. A RACT SIP submittal is required by this rule in addition to the area's 8-hour ozone attainment demonstration plan, which is also a SIP submittal.

IV. RACT SIP EVALUATION

EPA has not provided unique guidance for preparing RACT SIPs for the 8-hour ozone standard and has asked states to rely on previously published guidance. To fulfill the RACT review requirement this document is organized according to a basic framework as presented below:

- Identification of all source categories within St. Louis requiring RACT, including CTG sources (i.e., covered by an EPA Control Techniques Guideline document) and major non-CTG sources, and
- Submittal of negative declarations where there are no facilities (major or minor) within the ozone nonattainment area subject to a CTG.

A. DETERMINATION OF RACT SIP CATEGORIES

1. CTG Sources

The EPA has issued CTGs defining RACT for existing facilities that emit large amounts of air pollutants. Emissions sources covered by CTGs are referred to as CTG sources. Table A presents the CTG source categories, CTG reference documents, and the applicable Missouri rules. Table B presents CTG source categories without corresponding Missouri rules. In all such cases in Table B, there are no corresponding Missouri rules because the state has identified no sources located in the ozone nonattainment area within that category. See the section below for cases in which the generic RACT rules apply.

To determine if Missouri rules meet RACT requirements, staff relied on the following criteria: RACT rules that have been approved by EPA into the SIP are considered as fulfilling RACT requirements because EPA as part of their review must evaluate the rules to determine if they fulfill RACT requirements, Available Control Technology documents (ACTs), and EPA guidelines and policies. Therefore, any EPA SIP-approved Missouri rules are said to have met RACT requirements. During these rulemaking processes proposed rules were sent to EPA for comment prior to adoption. In addition EPA was sometimes involved directly in the rulemaking process and notices of workshops or stakeholder meetings were sent to EPA during rule development.

2. Non-CTG Sources

Major sources not subject to CTGs, but for which RACT is required, are referred to as non-CTG sources. To address these sources, Missouri promulgated two rules, 10 CSR 10-5.510 Control of Emissions of Nitrogen Oxides and 10 CSR 10-5.520 Control of Volatile Organic Compound Emissions From Existing Major Sources. All major sources of ozone precursors located in the ozone nonattainment area that are not subject to individual RACT rules are subject to one of these generic RACT rules. These rules apply to non-CTG sources that have the potential to emit 100 tons or more per year of either NOx or VOC. The St. Louis ozone nonattainment area's current definition of "Major Source" which is 100 tons per year which is the same threshold as under the previous 1-hour ozone standard.

Anheuser-Busch, Inc. has been identified as the only source currently affected by 10 CSR 10-5.510.

3. Sources Subject to MACT, NSPS, NESHAPS, & LAER

There are other regulatory mechanisms that affect sources in the St. Louis ozone nonattainment area. These include Maximum Achievable Control Technology (MACT), federal New
Source Performance Standards (NSPS), the National Emission Standards for Hazardous Air Pollutants (NESHAPS), and Lowest Achievable Emission Rate (LAER). Many of

these programs satisfy the RACT requirements for specific source categories because RACT rules may be less stringent than these.

10 CSR 10-6.060 Section (7) Construction Permits Required specifies requirements for new, replacement, or modified major emissions units in Missouri's nonattainment areas (like the St. Louis 8-hour ozone nonattainment area). The rule requires that such units be constructed using LAER if they may emit increased amounts of VOC or NOx. LAER is an emission limitation based on the maximum degree of emission reduction achievable through application of production processes and available methods, systems, and techniques. LAER does not permit emissions in excess of those allowed under any applicable federal Clean Air Act provision.

4. RACT SIP Evaluation Findings

Table A presents a list of the CTG categories. For each category, the corresponding rule name, original adoption date, and date of last amendment are provided. In many cases various federally referenced rules are applicable including NSPSs, MACT Regulations, and NESHAPS. Table A provides the reference to these applicable rules as well.

There are several CTGs and ACTs noted in Table B for which there are no sources in the St. Louis ozone nonattainment area. Therefore, RACT determinations for those CTG and ACT categories are not necessary. Instead, Missouri will rely on the generic RACT rules to address these categories.

B. CONCLUSION

Based on the foregoing, Missouri certifies that the current complement of St. Louis RACT rules that apply to ozone precursor for sources located in the nonattainment area fulfill the RACT requirements for the 8-hour ozone NAAQS. This is done either by source category rules, by BACT requirement, or by the generic RACT rules 10 CSR 10-5.510 and 5.520.

The 2006 RACT SIP Revision was an evaluation of current air pollution rules that apply in the Missouri portion of the St. Louis ozone nonattainment area and will not result in new or revised regulations.

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Coatings and Solvents					
Aerospace Manufacturing and Rework Operations & Coating Operations	Control of VOC Emissions from Coating Operations at Aerospace Manufacturing and Rework Operations (EPA-453/R-97-004, 12/97)	Applies to aerospace coatings and cleaning solvents used at aerospace manufacturing and rework operations including contractors and subcontractors.	10 CSR 10-5.295 Control of Emissions From Aerospace Manufacture and Rework Facilities	Feb. 29, 2000	Feb. 29, 2000
		Supersedes the applicable parts of the Miscellaneous Metal Part and Products CTG. Does not apply to manufacturing or rework operations involving space vehicles; rework operations performed on antique aerospace vehicles or components; or research and development, quality control, laboratory testing, and electronic parts and assemblies (except for cleaning and coating of completed assemblies.).	10 CSR 10-5.330 Control of Emissions From Industrial Surface Coating Operations	July 12, 1979	Jan. 30, 2001

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Coatings and Solvents					
Graphic Arts	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VIII: Graphic Arts - Rotogravure and Flexography (EPA-450/2-78-033, 12/78, NTIS PB 292-490).	Applies to graphic arts operations that use the flexagraphic and rotogravure printing processes as applied to both publication and packaging printing.	10 CSR 10-5.340 Control of Emissions From Rotogravure and Flexographic Printing Facilities	Sept. 12, 1980	Feb. 6, 1992
	Offset Lithographic Printing (EPA 453 R-94-054).	Applies to graphic arts operations that use the offset lithographic printing process.	10 CSR 10-5.442 Control of Emissions from Lithographic Printing Operations	May 28, 1995	May 28, 1995
		For fabric coating, applies to all types of coatings applied to fabric and any decorative or protective topcoat applied over vinyl-coated fabric or vinyl sheets. Does not apply to the application of vinyl plastisol to the fabric.	10 CSR 10-5.330 Control of Emissions From Industrial Surface Coating Operations	July 12, 1979	Jan. 30, 2001

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Coatings and Solvents					
Graphic Arts		For paper coatings, applies to all coatings put on paper, pressure sensitive tapes regardless of substrate (e.g.. paper fabric or plastic film), and related web coating processes on plastic film such as typewriter ribbons, photographic film, or magnetic tape. Also includes decorative coatings on metal foil such as gift wrap and packaging.	10 CSR 10-5.330 Control of Emissions From Industrial Surface Coating Operations	July 12, 1979	Jan. 30, 2001
		For automobile & light truck coating, applies to all objects surface coated in automotive and light duty truck assembly plants.	10 CSR 10-5.330 Control of Emissions From Industrial Surface Coating Operations	July 12, 1979	Jan. 30, 2001
Metal Furniture, Surface Coating of	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume III: Surface Coating of Metal Furniture (EPA-450/277-032, 12/77, NTIS PB-278-257).	Applies to surface coating of metal furniture by metal furniture manufacturers.	10 CSR 10-5.330 Control of Emissions From Industrial Surface Coating Operations	July 12, 1979	Jan. 30, 2001

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Coatings and Solvents					
Metal Parts and Products, Surface Coating of Miscellaneous	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VI: Surface Coating of Miscellaneous Metal Parts and Products (EPA-450/2-78-015, 6/78, NTIS PB-286-157).	Applies to industries that are not covered by specific CTG documents (Specific CTGs have been published for can, coil, automobile and light duty truck, metal furniture, magnet wire, and large appliances.).	10 CSR 10-5.330 Control of Emissions From Industrial Surface Coating Operations	July 12, 1979	Jan. 30, 2001
Solvent Metal Cleaning	Control of Volatile Organic Emissions from Solvent Metal Cleaning (EPA-450/2-77-022, 11/77, NTIS PB-274-557).	Applies to cold cleaners, open top vapor degreasers, and conveyorized degreasers which use volatile solvents to clean metal parts.	10 CSR 10-5.300 Control of Emissions From Solvent Metal Cleaning	June 11, 1979	May 30, 2002
	Halogenated Solvent Cleaners (EPA 450 3-89-030).		10 CSR 10-6.075 Maximum Achievable Control Technology Regulations	June 11, 1979	Oct.30, 2003

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Coatings and Solvents					
Wood Furniture Manufacturing	Control of VOC Emissions from Wood Furniture Manufacturing Operations (EPA-453/R-96- 007, 4/96, NTIS PB-96-178-769).	Applies to any facility that finishes wood furniture, or performs cleaning or wash off associated with wood furniture finishing operations.	10 CSR 10-5.530 Control of Emissions From Wood Furniture Manufacturing Operations	Feb. 29, 2000	Feb. 29, 2000
AutoTransport – Business Machine Plastic Coatings	AutoTransport - Business Machine Plastic (EPA 453 R-94-017).	Applies to surface coating of plastics used in motor vehicles and business machines.	10 CSR 10-6.070 New Source Performance Regulations	April 11, 1980	Nov. 30, 2005

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Coatings and Solvents					
Cans, Coils, Paper, Fabrics, Automobiles, and Light Duty Trucks, Surface Coating of	Control of Volatile Organic Emissions from Existing Stationary Sources - Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks (EPA-450/2-77-008, 5/77, NTIS PB-272-445).	For cans, applies to sheet basecoat and overvarnish, two piece can exterior basecoat and overvarnish, Two and three-piece can interior body spray, two-piece can exterior end spray or roll coat, Three piece can side seam spray, and end sealing compound. For coil coating, applies to prime and topcoat or single coat operation.	10 CSR 10-5.330 Control of Emissions From Industrial Surface Coating Operations, 10 CSR 10-6.070 New Source Performance Regulations, & 10 CSR 10-6.075 Maximum Achievable Control Technology Regulations	July 12, 1979, April 11, 1980, & Dec. 30, 1996	Jan. 30, 2001, Nov. 30, 2005, & Nov. 30, 2005

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Coatings and Solvents					
Ink and Paint Manufacturing	Control of VOC from Ink and Paint Manufacturing (EPA 453 3-92-013).	Applies to products of the paint manufacturing industry, including architectural coatings, product coating for original equipment manufacturers, and special-purpose coatings. Also applies to ink manufacturing, including letterpress inks, lithographic and offset inks, gravure inks, and flexographic inks.	10 CSR 10-5.390 Control of Emissions From Manufacture of Paints, Varnishes, Lacquers, Enamels and Other Allied Surface Coating Products	Mar. 11, 1984	Aug. 30, 2000

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Coatings and Solvents					
Large Appliances. Surface Coating of	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume V: Surface Coating of Large Appliances, EPA-450/2-77-034, NTIS PB-278-259).	Applies to the coating of large appliances, such as doors, cases, lids, panels and interior support parts of residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dish washers, trash compactors, air conditioners, and similar products.	10 CSR 10-5.330 Control of Emissions From Industrial Surface Coating Operations, 10 CSR 10-6.070 New Source Performance Regulations, & 10 CSR 10-6.075 Maximum Achievable Control Technology Regulations	July 12, 1979, April 11, 1980, & Dec. 30, 1996	Jan. 30, 2001, Nov. 30, 2005, & Nov. 30, 2005
Magnet Wire, Surface Coating for Insulation of	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume IV: Surface Coating of Insulation of Magnet Wire (EPA- 450/2-77-033, 12/77, NTIS PB-278-258), CTG.	Applies to wire coating curing ovens.	10 CSR 10-5.330 Control of Emissions From Industrial Surface Coating Operations	July 12, 1979	Jan. 30, 2001

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Petroleum					
Bulk Gasoline Plants	Control of Volatile Organic Emissions from Bulk Gasoline Plants (EPA-450/2-77-035, 12/77, NTIS PB-276-722), CTG.	Applies to bulk plants with daily throughputs of 76,000 liters (20,077 gal.) gasoline or less.	10 CSR 10-5.220 Control of Petroleum Liquid Storage, Loading and Transfer	March 14, 1967	Aug. 30, 1999
External Floating Roof Tanks, Petroleum Liquid Storage in	Control of Volatile Organic Emissions from Petroleum Liquid Storage in External Floating Roof Tanks (EPA-450-2/78-047, 12/78, NTIS PB-290-579), CTG.	Applies to external floating roof tanks larger than 150,000 liters (~40,000 gal. Or 950 bbls.) storing petroleum liquids.	10 CSR 10-5.220 Control of Petroleum Liquid Storage, Loading and Transfer	March 14, 1967	Aug. 30, 1999

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Petroleum					
External Floating Roof Tanks, Petroleum Liquid Storage in	Volatile Organic Liquid Storage in Floating and Fixed Roof Tanks (EPA 453 R-94-00).	Applies to storage tanks in all industries, but primarily in the petroleum refineries, pipelines, chemical plants, liquid terminals	10 CSR 10-5.500 Control of Emissions From Volatile Organic Liquid Storage	Feb. 29, 2000	Feb. 29, 2000
Fixed Roof Tanks, Storage of Petroleum Liquids in	Control of Volatile Organic Emissions from Storage of Petroleum Liquids in Fixed Roof Tanks (EPA-450/2-77-036, 12/77, NTIS PB-276-749) Organic Liquid Storage (EPA 453 R-94-00).	Applies to storage vessels with capacities greater than 150,000 liters containing petroleum liquids with a true vapor pressure greater than 10.5 KPa. Exempts fixed roof tanks with capacities less than 1,600,000 liters used to store produced crude or condensate prior to lease custody transfer.	10 CSR 10-5.220 Control of Petroleum Liquid Storage, Loading and Transfer	March 14, 1967	Aug. 30, 1999
	Volatile Organic Liquid Storage in Floating and Fixed Roof Tanks (EPA 453 R-94-00).	Applies to storage tanks in all industries, but primarily in the petroleum refineries, pipelines, chemical plants, and liquid terminals.	10 CSR 10-5.500 Control of Emissions From Volatile Organic Liquid Storage	Feb. 29, 2000	Feb. 29, 2000

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Petroleum					
Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	Control of Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds, (EPA-450/2-77-025, 10/77,NTIS PB-275-662).	Applies to non-condensables from vacuum producing systems, wastewater separators, and all pressurized process units.	10 CSR 10-6.070 New Source Performance Regulations	April 11, 1980	Nov. 30, 2005
Gasoline Dispensing Stage II Vapor Recovery	Stage II Gasoline Dispensing Facilities (EPA 450 3-91-022a).	Applies to gasoline dispensing into motor vehicles at gasoline dispensing facilities.	10 CSR 10-5.220 Control of Petroleum Liquid Storage, Loading and Transfer	March 14, 1967	Aug. 30, 1999
Gasoline Service Stations	Design Criteria for Stage I Vapor Control Systems - Gasoline Service Stations, (11/75), CTG.	Applies to filling of gasoline storage tanks from gasoline tanker trucks.	10 CSR 10-5.220 Control of Petroleum Liquid Storage, Loading and Transfer	March 14, 1967	Aug. 30, 1999

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Petroleum					
Organic Liquid Storage	Volatile Organic Liquid Storage in Floating and Fixed Roof Tanks (EPA 453 R-94-001).	Applies to storage tanks in all industries, but primarily in the petroleum refineries, pipelines, chemical plants, and liquid terminals.	10 CSR 10-5.220 Control of Petroleum Liquid Storage, Loading and Transfer	March 14, 1967	Aug. 30, 1999
Tank Trucks, Gasoline Loading Terminals	Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals (EPA-450/2-77-026, 12/77, NTIS PB-275-060);10/77.	Applies to tank truck terminals with daily throughputs greater than 76,000 liters (20,077 gal.).	10 CSR 10-5.220 Control of Petroleum Liquid Storage, Loading and Transfer, 10 CSR 10-6.070 New Source Performance Regulations, &10 CSR 10-6.075 Maximum Achievable Control Technology Regulations	March 14, 1967, April 11, 1980, & Dec. 30, 1996	Aug. 30, 1999, Nov. 30, 2005, & Nov. 30, 2005

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Petroleum					
Tank Trucks, Gasoline, and Vapor Collection Systems	Control of VOC Leaks from Gasoline Tank Trucks and Vapor Collection Systems (EPA-450/2-78-051, 12/78, NTIS PB-290-568).	Applies to gasoline tank trucks that are equipped with vapor collection systems and the vapor collection systems at bulk terminals, bulk plants and service stations.	10 CSR 10-5.220 Control of Petroleum Liquid Storage, Loading and Transfer, 10 CSR 10-6.070 New Source Performance Regulations, &10 CSR 10-6.075 Maximum Achievable Control Technology Regulations	March 14, 1967, April 11, 1980, & Dec. 30, 1996	Aug. 30, 1999, Nov. 30, 2005, & Nov. 30, 2005

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Stationary Source NOx					
Electric Utility Boilers	NOx Utility Boilers (EPA 453 R- 94-023).	Applies to electric utility boilers.	10 CSR 10-5.510 Control of Emissions of Nitrogen Oxides, 10 CSR 10-6.360 Control of NOx Emissions From electric Generating Units and Non-Electric Generating Boilers, & 10 CSR 10-6.070 New Source Performance Regulations	Feb. 29, 2000, Oct. 30, 2005, & April 11, 1980	May 30, 2006, Oct. 30, 2005, & Nov. 30, 2005

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Stationary Source NOx					
Industrial Commercial Boilers	Industrial Commercial Boilers (EPA 453 R-94-022).	Applies to boilers used in industrial facilities.	10 CSR 10-5.510 Control of Emissions of Nitrogen Oxides, & 10 CSR 10-6.360 Control of NOx Emissions From electric Generating Units and Non-Electric Generating Boilers	Feb. 29, 2000, & Oct. 30, 2005	May 30, 2006, & Oct. 30, 2005
Stationary Gas Turbines	Stationary Gas Turbines (EPA 453 R-93-007).	Applies to stationary gas turbines.	10 CSR 10-5.510 Control of Emissions of Nitrogen Oxides, & 10 CSR 10-6.070 New Source Performance Regulations	Feb. 29, 2000, & April 11, 1980	May 30, 2006, & Nov. 30, 2005

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Stationary Source NOx					
Stationary Reciprocating Internal Combustion Engines	Stationary Reciprocating IC Engines (EPA 453 R-93-032).	Applies to stationary reciprocating internal combustion engines.	10 CSR 10-5.510 Control of Emissions of Nitrogen Oxides, & 10 CSR 10-6.390 Control of NOx Emissions From Large Stationary Internal Combustion Engines	Feb. 29, 2000, & Aug. 30, 2000	May 30, 2006, & Sept. 30, 2001

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Stationary Source NOx					
Cement Manufacturing	Cement Manufacturing (EPA 453 R-94-004).	Applies to the kilns used in cement manufacturing.	10 CSR 10-5.510 Control of Emissions of Nitrogen Oxides, 10 CSR 10-6.380 Control of NOx Emissions From Portland Cement Kilns, 10 CSR 10-6.070 New Source Performance Regulations, & 10 CSR 10-6.075 Maximum Achievable Control Technology Regulations	Feb. 29, 2000, Oct. 30, 2000, April 11, 1980, & Dec. 30, 1996	May 30, 2006, Oct. 30, 2000, Nov. 30, 2005, & Nov. 30, 2005

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Stationary Source NOx					
Glass Manufacturing	Glass Manufacturing (EPA 453 R-94-037).	Applies to glass manufacturing.	10 CSR 10-6.070 New Source Performance Regulations, & 10 CSR 10-6.080 Emission Standards for Hazardous Air Pollutants	April 11, 1980, & April 11, 1986	Nov. 30, 2005, & Nov. 30, 2005
Iron and Steel	Iron and Steel Mills (EPA 453 R-94-065).	Applies to iron and steel manufacturing.	10 CSR 10-6.070 New Source Performance Regulations, & 10 CSR 10-6.075 Maximum Achievable Control Technology Regulations	April 11, 1980, & Dec. 30, 1996	Nov. 30, 2005, & Nov. 30, 2005

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Stationary Source NOx					
Nitric and Adipic Acid Manufacturing Plants	Nitric and Adipic Acid Manufacturing Plants (EPA 450 3-91-026).	Applies to nitric and adipic acid manufacturing operations.	10 CSR 10-6.070 New Source Performance Regulations	April 11, 1980	Nov. 30, 2005
Other					
Cutback Asphalt	Control of VOC from Use of Cutback Asphalt (EPA-450/2- 77-037, NTIS PB 278-185).	Applies to use of cutback asphalt used for roadway paving.	10 CSR 10-5.310 Liquefied Cutback Asphalt Paving Restricted	July 12, 1979	Mar. 11, 1989

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Other					
Ethylene Oxide - Sterilization and Aeration	Ethylene Oxide Sterilization Fumigation (EPA 450 3-89-007).	Applies to ethylene oxide used as a sterilant/fumigant in production of medical equipment supplies, in miscellaneous sterilization and fumigation operations, and at hospitals.	10 CSR 10-6.075 Maximum Achievable Control Technology Regulations	Dec. 30, 1996	Nov. 30, 2005
Large Petroleum Dry Cleaners	Control of VOC Emissions from Large Petroleum Dry Cleaners, EPA-450/3-82-009, 9/82, NTIS PB-83-124-875).	Applies to petroleum solvent dry cleaning facilities that consume 123,000 liters or more of petroleum solvent per year.	10 CSR 10-6.070 New Source Performance Regulations	April 11, 1980	Nov. 30, 2005
Perchloroethylene Dry Cleaning Systems	Control of Volatile Organic Emissions from Perchloroethylene Dry Cleaning Systems (EPA-450/2-78-050, 12/78, NTIS PB-290- 13).	Applies to all dry cleaning systems that use perchlorethylene.	10 CSR 10-6.075 Maximum Achievable Control Technology Regulations	Dec. 30, 1996	Nov. 30, 2005

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Other					
Synthetic Organic Chemical Manufacturing	Control of VOC Emissions from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry (EPA-450/3-84-015, 12/84, NTIS PB-85-164-275). Control of VOC Emissions from Reactor Processes and Distillation Operations in SOCMI (EPA-450/4-91-031, 11/15/93, NTIS PB-92-180-009).		10 CSR 10-5.420 Control of Equipment Leaks From Synthetic Organic Chemical and Polymer Manufacturing Plants, 10 CSR 10-6.070 New Source Performance Regulations, & 10 CSR 10-6.075 Maximum Achievable Control Technology Regulations	Sept. 26, 1986, April 11, 1980, & Dec. 30, 1996	Mar. 11, 1989, Nov. 30, 2005, & Nov. 30, 2005

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Other					
Air Oxidation Processes in SOCMI	Air Oxidation Processes in SOCMI (EPA 450 3-84-015 VOC).	Applies to air oxidation processes used in the synthetic organic chemical manufacturing industry.	10 CSR 10-6.070 New Source Performance Regulations	April 11, 1980	Nov. 30, 2005
Batch Processes	Batch Processes (EPA 453 R-93-017).	Applies to plastic materials and resins, pharmaceuticals, gum and wood chemicals, cyclic crudes and intermediates, industrial organic chemicals, and agricultural chemicals.	10 CSR 10-5.540 Control of Emissions From Batch Process Operations	Feb. 29, 2000	Feb. 29, 2000
Commercial Bakeries	Bakery Oven Emissions (EPA 453 R-92-017).	Applies to commercial bakery operations.	10 CSR 10-5.440 Control of Emissions from Bakery Ovens	May 28, 1995	Dec. 29, 2000

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Other					
Leather Tanning and Finishing Operations	Leather Tanning and Finishing Operations (EPA 453 R-93-025).	Applies to leather finishing operations.	10 CSR 10-6.075 Maximum Achievable Control Technology Regulations	Dec. 30, 1996	Nov. 30, 2005
Pharmaceutical Products	Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products (EPA-450/2-78-029, 1278, NTIS PB-290-580).	Applies to facilities and operations that synthesize pharmaceutical products.	10 CSR 10-5.350 Control of Emissions From Manufacture of Synthesized Pharmaceutical Products, &10 CSR 10-6.075 Maximum Achievable Control Technology Regulations	Sept. 12, 1980, & Dec. 30, 1996	Mar. 11, 1989, & Nov. 30, 2005

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Other					
Polyester Resin	Control of VOC Emissions from Manufacture of High – Density Polyethylene, Polypropylene, and Polystyrene Resins (EPA-450/3-83-008, 11/83, NTIS PB-84-134-600). Control of VOC Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment (EPA-450/3-83-006, 3/84, NTIS PB-84-189-372). Polystyrene Foam Manufacturing (EPA 450 3-90-020).	Applies to the manufacturing of high-density polyethylene, polypropylene, and polystyrene. Applies to emissions from equipment used in synthetic organic chemical polymers and resins. Applies to polystyrene foam manufacturing.	10 CSR 10-5.410 Control of Emissions From Manufacture of Polystyrene Resin, & 10 CSR 10-6.075 Maximum Achievable Control Technology Regulations	May 11, 1985, & Dec. 30, 1996	Mar. 11, 1989, & Nov. 30, 2005

Table A: Source Categories, CTG/ACT List, and Applicable St. Louis Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	Missouri Rule	Original Effective Date	Date Last Amended
Other					
Synthetic Organic Chemical and Polymer Manufacturing Equipment, Equipment Leaks from	Control of VOC Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment (EPA-450/3-83-006, 3/84, NTIS PB-84-189-372).	Applies to leaks of process fluids (gaseous or liquid) from plant equipment such as pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, and cooling towers.	10 CSR 10-5.550 Control of Volatile Organic Compound Emissions From Reactor Processes and Distillation Operations Processes in the Synthetic Organic Chemical Manufacturing Industry	Feb. 29, 2000	Feb. 29, 2000

Table B – Source Categories and CTG/ACT List for Which There Are No Applicable Missouri Sources

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	St. Louis Sources?
Coatings and Solvents			
Automobile Refinishing	Automobile Refinishing (EPA 450 3-88-009).	Applies to automobile refinishing operations.	No
Shipbuilding	Shipbuilding and Ship Repair Operations (Surface Coating) (61 FR 44050, 8/27/96).	Applies to coatings and solvents used for building or maintaining metal marine or fresh-water metal hulled vessel used for military or commercial operations, including self-propelled vessels and those towed by other craft (barges). This definition includes, but is not limited to, all military vessels, commercial cargo and passenger (cruise) ships, ferries, barges, tankers, container ships, patrol and pilot boats, and dredges.	No
	Surface Coating Operations at Shipbuilding and Ship Repair Facilities (EPA-453/R-94-032, 4/94, NTIS PB-94-181-864).	Applies to any marine or fresh-water metal hulled vessel used for military or commercial operations, including self-propelled vessels and those towed by other craft. This definition includes, but is not limited to, all military vessels, commercial cargo and passenger ships, ferries, barges, tankers, container ships, patrol and pilot boats, and dredges. Pleasure craft, such as recreational boats and yachts, are not included.	No
Coatings and Solvents			
Flat Wood Paneling, Surface Coating of	Control of Volatile Organic Emissions from Existing Stationary Sources, Volume VII: Factory Surface of Flat Wood Paneling (EPA-450/2-78-032, 6/78, NTIS PB 286-199).	Applies to interior paneling made of wood products.	No

Table B – Source Categories and CTG/ACT List for Which There Are No Applicable Missouri Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	St. Louis Sources?
Petroleum			
Natural Gas/Gasoline Processing Plants, Equipment Leaks from	Control of VOC Equipment Leaks from Natural Gas/Gasoline Processing Plants (EPA-450/2-83-007, 12/83, NTIS PB-84-161-520), CTG.	Applies to facilities engaged in the separation of natural gas liquids from field gas and/or fraction of the liquids into natural gas products, such as ethane, propane, butane and natural gasoline. It is not applicable to compressor stations, dehydration units, sweetening units, field treatment, underground storage facilities, liquefied natural gas units and field gas gathering systems unless they are located at a gas plant.	No
Petroleum Refinery Equipment, Leaks from	Control of VOC Leaks from Petroleum Refinery Equipment (EPA-450/2-78-036, 6/78, NTIS PB-286-158).	Applies to leaks equipment such as pumps, compressors, flanges, valves and, pressure relief devices.	No
Process Heaters	Process Heaters Revised (EPA 453 R-93-034).	Applies to direct-fired heaters used primarily in the petroleum industry	No

Table B – Source Categories and CTG/ACT List for Which There Are No Applicable Missouri Rules, cont'

CTG Source Category	CTG/ACT Reference Document	CTG/ACT Applicability	St. Louis Sources?
Other			
Agricultural Pesticides	Control of VOC from the Application of Agricultural Pesticides (EPA 453R-92-011).	Applies to pesticides used for agricultural purposes.	No
Fuel Switching	Fuel Switching to Meet RACT for NOx (EPA Memorandum, July 30, 1993).	Applies to switching to a cleaner burning fuel during ozone season.	N/A/
Plywood Veneer Dryers	Control Techniques for Organic Emissions from Plywood Veneer Dryers (EPA 450 3-83-012 VOC).	Applies to softwood plywood manufacturing operations.	No
Pneumatic Rubber Tires, Manufacture of	Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires (EPA-450/2-78-030,12/78, NTIS PB-290-557).	Applies to manufacturing processes; undertread cementing, tread-end cementing, bead dipping, and green tire spraying.	No